

WHAT IS CLAIMED IS:

1. A capacitive dynamic quantity sensor comprising:

a substrate;

a weight, which is displaced by a dynamic quantity;

a movable electrode, which is integrated with the weight;

a first movable unit anchor, which is fixed to the substrate to suspend the weight and the movable electrode above the substrate;

a fixed electrode, which is arranged to face the movable electrode, wherein a displacement of the movable electrode that is caused in response to the dynamic quantity is detected as a variation in a capacitance between the movable electrode and the fixed electrode;

a first spring, which is located between the first movable unit anchor and the weight and resiliently deforms in response to the dynamic quantity such that the movable electrode is displaced by a distance corresponding to the dynamic quantity; and

a first strain buffer, which is located between the first movable unit anchor and the first spring to reduce an influence of a strain generated in the substrate on the first spring.

2. The sensor according to claim 1 further comprising:

a second movable unit anchor, which is fixed to the substrate to suspend the weight and the movable electrode above the substrate;

a second spring, which is located between the second movable

unit anchor and weight and resiliently deforms in response to the dynamic quantity such that the movable electrode is displaced by the distance corresponding to the dynamic quantity; and

a second strain buffer, which is located between the second movable unit anchor and the second spring to reduce the influence of the strain, wherein the springs are linked to the weight at two opposite ends of the weight.

3. The sensor according to claim 1, wherein the first strain buffer is a strain-buffering spring that resiliently deforms to absorb the strain and wherein the strain-buffering spring has a spring constant greater than that of the first spring.

4. The sensor according to claim 3, wherein the spring constants of the first spring and the strain-buffering spring satisfy an equation,

$$K2 \geq K1 \times 100$$

where $K1$ and $K2$ are the spring constant of the first spring and the spring constant of the strain-buffering spring, respectively.

5. The sensor according to claim 3, wherein each of the first spring and the strain-buffering spring is in a shape of a rectangular frame that has a through-hole that extends orthogonally to a displacement direction of the movable electrode and wherein the first spring and the strain-buffering spring are different from each other in one dimension selected from the group

consisting of a length of the frame in directions orthogonal to the displacement direction and a width of the frame in the direction parallel to the displacement direction such that the strain-buffering spring has a spring constant greater than that of the first spring.

6. The sensor according to claim 5, wherein the first spring and the strain-buffering spring have substantially the same frame width and wherein the frame length of the first spring is 4.7 times or more greater than the frame length of the strain-buffering spring.